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IN THIS ISSUE

THE GEOGRAPHY OF SOUTHERN CALIFORNIA
H. W. FAIRBANKS

A PROJECT—AN AMERICAN LEGION REUNION
ROXANA M. ADAMS

GEOGRAPHY IN THE SCHOOLS OF ENGLAND AND WALES
W. H. BARKER

THE VALUE OF REGIONAL GEOGRAPHY
C. E. MARSTON

PROJECT ON LUMBERING
HARRIET SMITH

INTRODUCTORY GEOGRAPHY FOR COLLEGES
RODERICK PEATTIE

NATIONAL COUNCIL MEETING

THE JOURNAL OF GEOGRAPHY

A MAGAZINE FOR TEACHERS

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The JOURNAL *of* GEOGRAPHY

VOLUME XX NOVEMBER, 1921 NUMBER 8

THE GEOGRAPHY OF SOUTHERN CALIFORNIA A STUDY FOR TEACHERS

H. W. FAIRBANKS

Berkeley, California

WHAT DO WE MEAN BY THE TERM "SOUTHERN CALIFORNIA"?

Southern California offers a remarkably interesting and instructive study in geography partly because of the great variety of surfaces, climates and productions found in a limited area, and partly because it illustrates clearly how an energetic people can in a very short time transform a naturally barren and desert-like region into a land of fruits and flowers.

California is divided by mountains and desert into a number of distinct regions or provinces. The desert province sends a long arm westerly almost to the ocean dividing the state into two parts. The smaller part, lying to the south, and separated from the desert by a system of lofty mountains, is known as Southern California.

WHY IS IT THAT THE RAPID DEVELOPMENT OF THIS REGION HAS BEEN OF RECENT ORIGIN?

California came into prominence in 1848, not because it was thought to be a pleasant place in which to live or that it had any particular advantages for farming and fruit growing, but solely as a result of the discovery of gold. Southern California was but little affected by the gold discoveries for it was remote from the Diggings and its valleys had such a dry appearance that it was discouraging to the would-be farmers. The region is naturally isolated; to the east lies the once dreaded Colorado Desert; to the north and northeast is the Mohave Desert; to the northwest, forming a barrier between the desert and the ocean, is a belt of very rough brush-covered mountains difficult to traverse.

The region is still more isolated because of the San Gabriel-San Bernardino mountain wall on the north and northeast, while the Peninsula range beginning with Mt. San Jacinto and extending south into Lower California forms a barrier between the coastal slope and the

Colorado Desert. It is easy to understand from the above facts why Southern California, in spite of its many advantages, made slow progress until the railroads came.

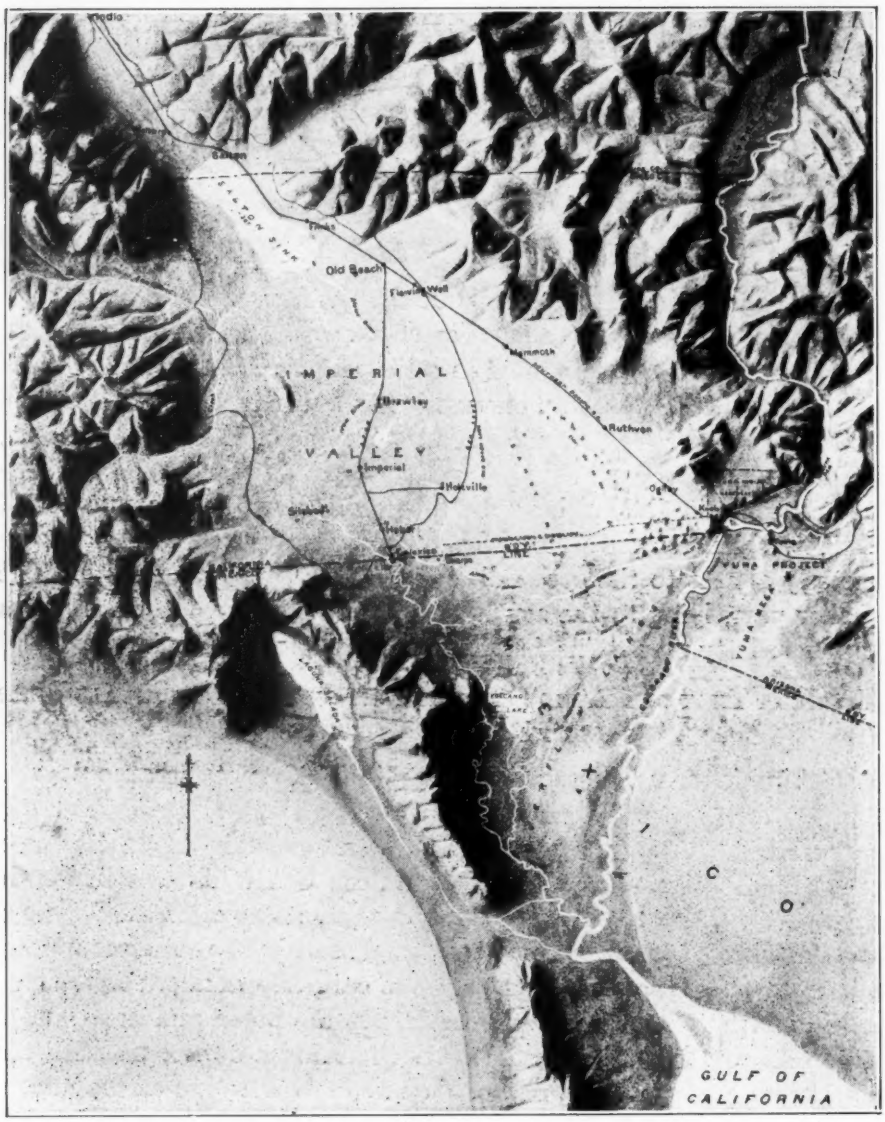

FIGURE 1. Map of Imperial Valley (formerly Colorado Desert)

HOW CAN WE ACCOUNT FOR THE FACT THAT THE POPULATION IS VERY UNEQUALLY DISTRIBUTED?

Water for irrigation was the first thing the prospective settler sought. The coastal slope of Southern California is drained by many

streams. Of these only the Ventura, the San Gabriel and the Santa Ana can be termed rivers. The early missions, towns and ranch buildings were located near the streams from which the water needed to irrigate the gardens could be easily diverted in ditches. With the later drilling of wells and the building of large irrigation systems the population became more evenly distributed over the valley lands.

A large part of the surface is mountainous. All that region lying north of the Ventura River valley, excepting the Ojai valley and the Santa Barbara coastal plain, is extremely mountainous. These mountains are so steep and brush-covered that they have little value even for grazing purposes, and altho they contain some minerals, must always remain almost uninhabited.

FIGURE 2. Looking across the tops of the peaks and ridge of the San Gabriel Range

The San Gabriel range (Sierra Madre) is a mass of steep, lofty mountain ridges (Fig. 2) exhibiting little agricultural land. In this range rise the Tejunga (head of the Los Angeles River), the San Gabriel and San Antonio rivers the waters of which are necessary to the orange groves of the Los Angeles valley. The San Gabriel range contains few minerals and will remain in most parts uninhabited save for wandering stock-men and summer campers.

The San Bernardino range is, in many respects, just the opposite of the San Gabriel. It contains many lofty valleys and gently sloping ridges which are heavily forested. But the valleys are so high and cold that their most useful service is in conserving water supplies, altho they also furnish a range for cattle and summer camp grounds.

The Peninsula range forks as it extends north from Lower California. The eastern part overlooking the Colorado Desert terminates in San Jacinto Peak which is 10,805 feet high. The western branch which is known as the Santa Ana range sinks to form the Whittier Hills and rises again northward in the Verdugo Mountains.

The Peninsula range, with its different spurs, contains innumerable uplands used chiefly for grazing but now devoted also to grain and fruit.

The Colorado Desert occupies the eastern part of Southern California. This desert remained entirely unsettled until the introduction of water in 1902. This once dreaded waste is becoming a rich and well-settled region.

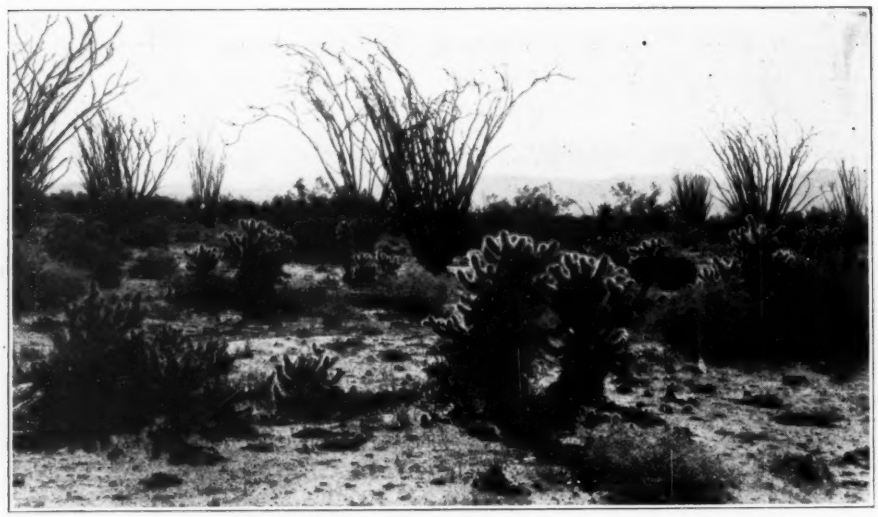

FIGURE 3. Vegetation on the western side of the Colorado Desert

WHAT WAS THERE ABOUT THE APPEARANCE OF MOST OF SOUTHERN CALIFORNIA WHICH LED THE EARLY EXPLORERS TO BELIEVE IT TO BE OF LITTLE VALUE FOR AGRICULTURAL PURPOSES?

The lower valley slopes have naturally a desert-like appearance being covered with such bushes as manzanita, sage, scrub oak, etc. Sycamore trees appear along the streams. Live oaks abound in the cayons and dot the mountain valleys. During most of the year the streams upon emerging from the mountains sink beneath their sandy beds as they flow across the broad slopes leading to the sea. This adds to the desert-like appearance of the lowlands.

The slopes toward the Mohave and the Colorado possess a true desert character. Here are the sage, creosote bush, greasewood, mes-

quite and a great variety of cacti (Fig. 3.). A native palm grows about the springs on the borders of the Colorado desert. Forests of yuccas cover portions of the Mohave Desert. Occasionally there are years when the spring rains give rise, during a few weeks, to a carpet of beautiful flowers.

Is All the Region as Dry as One Would Suppose from a Journey Thru the Valleys?

The presence of forests on the mountains above 5,000 feet and the torrential streams issuing from them in the spring, tell us that the precipitation is much greater in these highlands than in the lowlands. In reality thirty to forty inches of rain and snow fall upon the mountains while only ten to fifteen inches fall in the valleys. Thus the mountains make possible the presence of forests in an otherwise dry land and afford a water supply without which Southern California must always have remained sparsely settled (Fig. 4.).

How Can We Account for the Dry Climate of the Greater Part of Southern California?

The region lies in the warm temperate belt where, during a part of the year, westerly winds prevail. These winds bring the cyclonic disturbances to which most of the rains are due. These storms decrease in number and intensity toward the south and, in the summer, are usually lacking except for thunderstorms in the mountains. In summer the horse latitude belt moves northward over Southern California so that we would naturally expect little or no rain during this season.

Why Do We Call Southern California the "American Mediterranean"?

Southern California lies in the same latitude as the real Mediterranean region which is also characterized by winter rains and summer drought. As we should expect the products of the two regions are much alike. Owing, however, to an adjacent belt of cold water the California coast climate differs from the real Mediterranean in being cool and foggy.

What Are the Advantages and Disadvantages of the Mediterranean Climate?

The apparent disadvantage of the Mediterranean climate is the lack of rain in summer when the need of moisture is greatest. To grow successfully most crops and fruits irrigation must be employed.

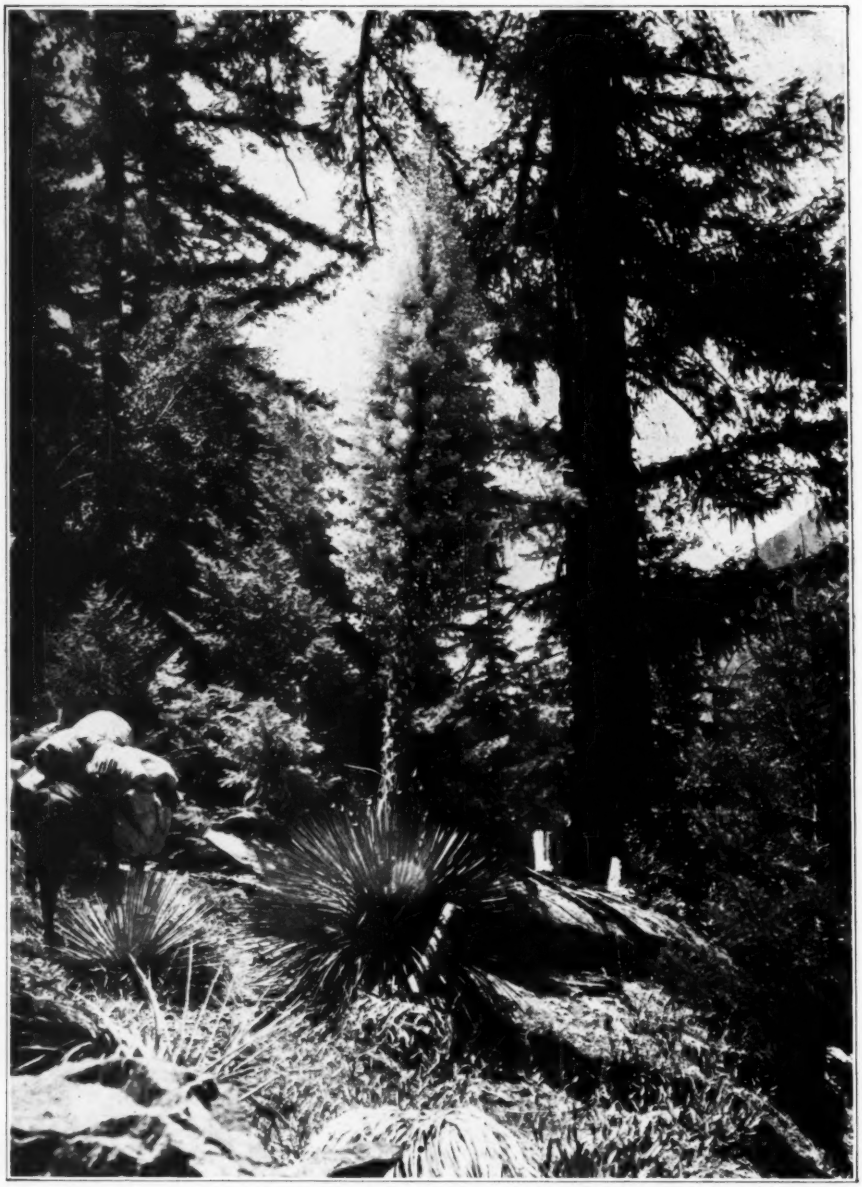

FIGURE 4. Scene in the San Gabriel Range showing Spanish Bayonet in bloom and a Big Cone Spruce

This is a comparatively simple matter where streams are convenient but when near-by streams also dry up and many miles of canal have to be built the labor and expense are great.

If rains fell abundantly during the warm Mediterranean summers everything would grow so luxuriantly that little exertion would be necessary. Since exertion tends toward greater efficiency irrigation plays a beneficial part in the development of peoples. When dependence is placed upon chance rains there is often a partial or complete failure of crops. Where irrigation is practiced the farmer can be certain of abundant returns if he does his work well.

Why Is It that Southern California Exhibits Such Variations from Its Typical Mediterranean Climate That Fruits of Almost All Regions Thrive There?

The immediate coast is even tempered and foggy in summer. In this climate beans, beets, and other vegetables thrive. The farther inland we go the greater becomes the range in temperature between day and night, winter and summer. The semi-tropic Mediterranean fruits do best upon the slopes of the interior valleys which are not exposed to ocean winds.

The Peninsula range so completely cuts off the ocean wind that the Coachella and Imperial valleys (Colorado Desert) at its eastern base are extremely hot and dry. The heat is great enough for tropical fruits during the summer but the dry air and occasional winter frosts are unfavorable to most of them.

Large areas of Southern California are so high that they have a cold winter climate. In such places apples and other temperate fruits thrive. The summits of the highest peaks reach above the timber line and have an arctic climate.

How Have Earthquakes Aided in Making Possible a Dense Population in Southern California?

Long ago there were no high mountains in what is now known as Southern California. The low mountains and broad valleys characteristic of the Mohave Desert region stretched unbroken southwesterly across the present lofty mountains to the ocean. The topography of a large region about Riverside closely resembles that of the present Mohave Desert.

Finally there came a time of mountain making. Earthquakes accompanied the breaking of the earth's crust and the mountain ranges of today began to appear. If we can judge from earthquakes experienced since the first settlers came, the movements have continued down to the present time.

The greatest fracture along which movements have taken place is the San Andreas rift which crosses diagonally from the north base of

the San Gabriel range to the southern base of the San Bernardino range. The last great earthquake in Southern California took place on this rift in 1858. Earthquakes have occurred on the San Jacinto rift passing near the town of that name and in Imperial Valley but none along that wonderful rift which gave rise to the Temecula-Elsinore Valley. When the mountain wall upon the south of this valley was lifted it dammed the San Jacinto River and thus formed Lake Elsinore.

With the gradual appearance of high mountains the rainfall increased until the conditions existing today were reached. If all the water falling on these mountains was conserved there would be enough to irrigate all the fertile valley lands.

WHY IS IT THAT ALTHO THE SAN GABRIEL RANGE IS VERY PICTURESQUE THE SAN BERNARDINO RANGE POSSESSES FAR GREATER ECONOMIC IMPORTANCE?

The San Gabriel range is made up of steep ridges between which are deep V-shaped cayons. There is little land level enough for cultivation and the forests are limited in extent. The rainwater runs off so quickly that the springs are few and small, and the streams very low in summer.

The San Bernardino range, like the Sierra Nevada, contains numerous upland valleys, meadows and forests, so that the rain and snow water linger and give rise to many springs and permanent streams. The San Bernardino range is higher than the San Gabriel and this adds somewhat to the precipitation, but the great difference between the two ranges is that the latter is much older. The ancient rolling surface of the Mohave Desert is still in large measure preserved in the San Bernardino range while in the San Gabriel it has been destroyed by erosion.

The two main peaks of the San Bernardino range rise to a great height, Mt. San Bernardino being 10,666 feet and San Gorgonio 11,485 feet. In a broad basin on the north slope of the latter there once existed a large glacier, while other smaller glaciers nestled in hollows on the north side of the ridge connecting the two peaks. The glaciers piled huge masses of rock and gravel at their lower ends. The gravels act as reservoirs for the snow water and afford wonderful living springs which unite to form the Santa Ana River. For this reason the Santa Ana carries the largest permanent water supply of any Southern California river.

What Can We Learn from the Bed of Salt, Now Overflowed by the Salton Sea, About the Story of the Colorado Desert?

Until 1902 the Colorado Desert was a waterless waste. In that year a canal bringing water from the Colorado River was completed and soon green fields began to appear. In 1905 the river, during the June high water stage, broke thru the headgates of the canal, and flowing down an ancient channel known as New River formed a lake in the lowest part of the desert. It was not until 1906 that the water was again under control. By that time a lake thirty miles long and fifteen miles wide had been formed.

Figure 5. Beach of the Ancient Salton Sea at foot of San Jacinto Mountains

In the lowest part of this basin, 287 feet below sea level, there existed prior to the formation of the lake a glittering bed of salt with important salt works on its northern margin. This salt deposit was the remains of a great lake once covering a large part of the desert. The shore lines of this ancient lake are still to be seen along the bases of the surrounding mountains (Fig. 5.).

Long ago the region of this lake formed the head of the Gulf of California. The Colorado River, the mouth of which was once near Yuma, carried down to the gulf such vast quantities of silt that solid land was finally formed across it. The body of salt water cut off at the northern end of the gulf occasionally received additions as the river changed its channels over the delta but finally dried up leaving the bed of white salt.

WHY IS IT THAT NOTWITHSTANDING THE GREAT SUMMER HEAT OF COACHELLA AND IMPERIAL VALLEYS THOUSANDS OF PEOPLE HAVE NOW MADE THEIR HOMES IN THEM?

The vast desert delta, like Egypt and Mesopotamia, possesses the richest of soils, lacking only water to turn it into a garden. Farmers are being attracted from all parts of the country by the wonderful possibilities of the region. Spring comes so early that vegetables can be marketed in advance of those from any other part of the country. After the early vegetables comes the cantelope crop also in advance of other localities and hence assured of a good market. Cotton which requires a long hot season has now become one of the most important crops. Dates are also grown to perfection, especially in Coachella valley where the soil and climate are perfectly adapted to making this a great industry.

HOW IS IT THAT A REGION NATURALLY SO DRY AND ISOLATED AS WAS SOUTHERN CALIFORNIA HAS BECOME SO RICH AND PROSPEROUS?

Hundreds of miles of canals have been dug, huge reservoirs, such as Bear Lake in the San Bernardino Mountains have been built. The Los Angeles acqueduct, the most remarkable water system in the world, brings water from the Sierra Nevada Mountains 240 miles away. This acqueduct takes a river of water from a region where there was little use for it and makes possible the development of intensive culture over hundreds of square miles otherwise without water. Innumerable wells have been sunk in the deep gravels forming the long gentle slopes at the bases of the mountains. These gravel deposits take in the winter flood waters like a sponge and hold them for the summer needs of the farmer.

Another essential factor in the growth of Southern California is the railroads. A railroad east thru the San Gorgonio Pass, two northeast thru the Cajon Pass, one north thru the San Fernando Pass tunnel, and one northwest thru the Chatsworth tunnel lead to markets in all parts of our country.

The improvement of the shallow water harbor of San Pedro by dredging and the building of a long breakwater, has added an important seaport, making the region more accessible by water. The good natural harbor of San Diego is now connected directly with the East by a railroad across the Peninsula range.

The remarkable growth of Southern California during the last twenty-five years is due as much to the character of the people as to

anything. With settlers unable to overcome the obstacles placed there by nature the country might have remained in a condition much like that of Mexico.

In How Far Are the Life and Development of Each Locality Dependent upon Its Particular Environment?

Since the moist lowlands along the streams are more frosty than the higher slopes they are not well suited to citrus fruits. There we find alfalfa fields, dairying, sugar beets, corn and other vegetables. The vast bean fields for which Southern California is so noted are found near the coast where the air is damp and foggy.

Between the valley lowlands and the steep mountains are the long gentle slopes so well adapted because of soil, drainage, and climate, to the growing of oranges, lemons, figs, olives, and grapes. In this almost frostless belt are miles of orchards. The scenery is attractive, the climate healthful and the heat of summer is modified by the "high fog" which floats in from the ocean. The fruit belt supports most of the towns and cities and exhibits the most intensive culture.

Those interior valleys which are a little too high and frosty for oranges are usually devoted to grain and temperate fruits altho cattle raising continues to be the leading industry in the less progressive districts. The lower brush-covered canyon slopes support such shrubs as the white sage noted for the quality of the honey made from its blossoms. In such localities far from the common routes of travel we find bee ranches each with its hundreds of hives.

The San Bernardino range contains the most important forests of Southern California and extensive lumbering operations have been carried on there. Cattle and sheep are pastured over much of the mountain area. Since the establishment of the National Forests mountain grazing has been much restricted, because of the necessity of carefully preserving the natural growth which helps to keep the rainwater from running off as fast as it otherwise would.

Minerals, especially gold, are found to some extent in the mountains east of San Diego and north of Los Angeles. Beautiful tourmalines and other gems are mined in several places. The lower hills about the borders of the Los Angeles valley and along the Ventura River valley contain vast deposits of petroleum. These fuels have contributed materially to the recent industrial development of Southern California.

What Conditions Determined the Position of the First Settlements in Southern California?

The fact that the region was reached and explored from the sea resulted in the first settlements being made near the coast. The first thing taken into account in choosing sites for missions, presidios, and ranch buildings, was water. The second thing was the question of land suitable for cultivation. The water must be easily accessible and permanent. Without water for irrigation the necessary food supplies could not be grown.

Why Did San Diego, Tho Founded First and Possessing the Best Harbor, Remain a Small and Unimportant Place for Many Years?

San Diego possesses the best harbor, with the exception of San Francisco, to be found upon the coast of California. For this reason one, not knowing its environment, would have expected it to grow rapidly and become the metropolis of the South. The city has suffered seriously from its position. It not only lies off the main line of travel to the Pacific Coast but, until 1919, could be reached by railroad only by way of Los Angeles. The rugged Peninsula range blocked the building of a road eastward to Yuma for many years. Such a road has at last been completed and the city now has direct communication with the East.

Besides being difficult of access the region around San Diego was very dry and desert-like. "Mesas" come down to the ocean and these are intersected by valleys. The valley lands could be easily irrigated but the mesas could not be settled until costly irrigation systems had been built.

Thru the conquering of many natural obstacles San Diego has now all the advantages that could be desired. Railroads make connection with the East and North. The commodious harbor can be entered by the largest sea-going boats. There is an abundance of water, and perhaps best of all, the climate healthful and agreeable both winter and summer.

Why Has Los Angeles, Tho Situated Sixteen Miles from the Ocean and Without Apparent Advantages Except Water and Fertile Land, Become the Largest City on the Pacific Coast?

Los Angeles was founded by an expedition from San Diego. The location chosen was upon the northern border of a broad plain where a stream of living water broke thru a line of hills. The Los Angeles

River rises in springs in the lower end of the San Fernando Valley, the water coming from the San Gabriel Mountains thru the underground channel of the Tejunga River.

The relative position of the surrounding mountains and valleys has been, perhaps, the most important factor in the growth of the city of Los Angeles. These features are so placed that whichever way one wishes to travel across this region he naturally goes by Los Angeles. The city is really one of the best examples of a cross-roads influence to be found in our country. Large and highly cultivated valleys on the northwest, south, and east, are tributary to the city. The city is the natural terminus for railroads as it was in the early days for wagon roads. It is a natural transfer point for peoples and commodities.

Being situated sixteen miles from the shallow little harbor of San Pedro the growth of the city was for many years little influenced by the ocean. In fact ocean travel was for a time diverted from San Pedro to Santa Monica and Redondo where piers were built out into the open water. Now a good artificial harbor has been created at San Pedro and the city has been annexed by Los Angeles. Important shipbuilding and other manufacturing plants have grown up at San Pedro.

Last but not least of the factors concerned in the growth of Los Angeles is its climate and attractive environment. Owing to its position midway between the hot interior and the cool coast it rarely suffers from extremes of heat or cold. The delightful winter climate and the many picturesque suburbs attract thousands of visitors yearly.

How Do the Valleys, Slopes, and Mountain Passes, Favor the Growth of Other Cities?

San Bernardino lies in a broad rich valley at the foot of mountains of the same name and near the entrance to the Cajon Pass.

Pasadena owes its renown to its agreeable climate and beautiful position at the foot of the San Gabriel range.

Redlands and Riverside lie in the heart of the orange district where water can be easily obtained from the Santa Ana River.

The string of cities along the coast from Long Beach westerly owe their beginnings and present importance, largely to the attractiveness of their beaches as summer resorts.

Santa Barbara occupies a picturesque position upon an open roadsted at the foot of the Santa Ynez range. The coast lowlands broaden out here to form an extensive fertile plain.

A PROJECT—AN AMERICAN LEGION REUNION[1]

ROXANA M. ADAMS
Teacher-Training School, Kansas City, Mo.

I. An American Legion Reunion: reminiscences of France given, pictures and souvenirs shown, also entertainment enjoyed. Children in Room Two are to be the soldiers and Red Cross workers returned from France.

II. Teacher's Aim

A. Ultimate

1. To learn and appreciate the great things the French have contributed to civilization
2. To appreciate interdependence of France and United States
3. To interest the children in French History to the extent that they continue their reading outside of school of such books as, Napoleon, Joan of Arc, Tale of Two Cities, Lafayette
4. To cultivate the reading and study habit
5. To appreciate problems which confronted the government and to create respect for the government

B. Immediate

1. To give rational knowledge of France

[1] Dr. E. A. Hotchkiss, Director, Kansas City Teacher-Training School, has supplied the following information: Miss Adams' project required two weeks' time. The student's achievement was measured by Monroe's Standardized Silent Reading Test, with the following results:

January 28. Test 1, Form 1 was given with the following results: rate 115; comprehension 26.

April 8. Test 1, Form 1 was repeated with the following result: rate 149; comprehension 42.

(The sixth grade standard for this test is: rate 88; comprehension 20.)

April 15. Test II, Form II was given with the following results: rate 162; comprehension 33.9

(As 162 is the limit in speed in this text, it was decided to give a high school test to this sixth grade.)

May 3. Test III, Form II (A high school test) was given with the following results: rate 122; comprehension 35.

(The standard for high school seniors in this test is: rate 89; comprehension 28.2. This sixth grade made a showing of 122 in rate and 35 in comprehension in a high school reading test, where the standard in this test for seniors in high school is 89 in rate and 28.2 in comprehension.

This is certainly a remarkable showing in support of what can be done thru the project method of teaching.—*Editor.*

2. To show the effect of natural surroundings—climate, soil, minerals and location, on development
3. To create an atmosphere of "France" in the room while studying France
4. To raise problems which will be solved by children, e. g., "Why do the French drink so very much wine?"

III. Materials

A. Books. Tarr and McMurry: Geography, Book Two; Atwood: New Geography, Book Two; Carpenter: Europe; Carpenter: How the World Is Clothed; Smith: Commerce and Industry; Cressy: The Story of Food; Allen: Europe; Chamberlain: How We Are Clothed; Williams: Paris; Mariam M. George: Little Journeys to France and Switzerland; Bradley: Touring Europe in an Automobile; Monroe and Buckbee: Europe and Its People; Dickens: Tale of Two Cities; Keysor: Rosa Bonheur; Barstow: Famous Buildings; Nicolay: Boy's Life of Lafayette; Wheeler: Boy's Napoleon; Stevenson: Children's Classics in Dramatic Form (Jean Val Jean, dramatized); Canfield: Home Fires in France (pp. 1–26, and pp. 259–261); *National Geographic Magazine*

B. Pictures. Rosa Bonheur, Millet, Corot, and National Geographical Society's pictures

C. Maps

D. Newspaper clippings

E. Victor Record, "The Marseillaise"

F. Songs, "The Marseillaise"; "Somewhere in France Is a Lily"; "Joan of Arc"; "Long, Long Trail"

IV. Procedure

A. Raising of Project. A boy brought a shell which his brother had picked up from a battle field in France. The children were intensely interested in the shell and in what the boy told of the things his brother saw in France. Other children were eager to bring souvenirs which they had at home and to tell of the things their friends and relatives had seen in France. In consequence it was decided to pretend they were their brothers and friends and to have a reunion of all the

returned soldiers; to tell of the interesting things they saw in France (it was decided to say very little about war scenes), to show the things brought back and to prepare some entertainment for the day (child's project).

B. Exploration

1. Problems

One. How did the soldiers get to France? A study of the ports from which they sailed in United States, the ports in Europe at which they landed, and a drill on proper pronunciation of French names.

Two. What soldiers of the French Republic were seen fighting who did not come from France? Map study of French possessions, descriptions of French from Algeria, Tunis, Morocco, Sudan, Sahara and other French possessions. Use of block outline map, showing French possessions over the world.

What other possessions could have sent soldiers? Corsica, Madagascar, French Guiana, St. Pierre, Miquelon, Somaliland, French Indo-China. What products did these islands send to help the French soldiers?

Three. Many of the soldiers did not get to see Paris. What impressions were received by the ones who were fortunate? As seen by the soldiers in and near Paris: beautiful parks and boulevards, Louvre, the tomb of Napoleon—Study "History of Napoleon," Eiffel Tower, Notre Dame, suburbs, Versailles, Malmaison, Fontainebleau, shops, the Opera House, Jeanne d'Arc as seen in front of Pantheon, Champs Elysées.

Four. Why did the French peasants have so much money at the beginning of the war?

1. Thrift of the French peasant
2. School Savings Banks in France

Problems in Arithmetic. A French boy attends school eight years in the grades. He has 18 francs (using 19 cents as a franc), each succeeding year he saves one more, 19

francs the second, 20 the third, etc. By the time he is thru how much would he have in our money? How could he have more than that?

Study of interest as presented in Thorndyke. Each child is given a blank check, is taught how to make out a check, writes a check for $100 which he places with the "Woodland Bank." He figures interest, simple and compound, on his $100. Thorndyke problems and others made by the class solved. Problems in changing soldier's money to francs.

Five. Why was the water in France tested before the soldiers used it for drinking? Study of impure water: germs, value of boiling water before drinking. Is the same result found from freezing the water? Kansas City water. Ozark project as contemplated.

Six. Why did the soldiers see so much wine drinking in France? Study of sanitary conditions, sewerage in rural France, and reasons for impure water. Why did the foreign population in United States object to prohibition? Study of grape raising and wine manufacturing as an industry. People employed in manufacturing, amount made, consumption, etc. The 18th amendment.

Seven. Some of our soldiers saw the King of England. How many saw the King of France? Picture of new President Millerand shown. Tricolor made and hung with the Stars and Stripes. Current events about new cabinet, length of office of President of France, Elysee Palace, Residence, Premier. Ex-Premier's trip to Africa. History of France, Monarchy to Republic. Louis XIV, XVII, Napoleon. Characters of interest in France. Gen. Joffre. Jeanne d'Arc. Historical events.

Eight. How do battle fields now appear. Battle fields marked out on map. Pictures shown of them as they are today. Reconstruction in France.

New territory added. Clearing fields of shells, danger from unexploded shells, etc.

Nine. What difference did our soldiers see in the methods of transportation in France and at home? Trains, boats, trucks, etc. Why did they see small freight cars and engines?

Ten. What did the soldiers see in rural France which amused them? Experiences of American Red Cross workers as given by Dorothy Canfield Fisher in, "Home Fires in France."

Eleven. Why do some of the soldiers have an "A" on their sleeves? (Army of Occupation) Where did they occupy Germany? Where did the Germans enter France? Was it easier to enter from that direction than from any other? Study of frontier of Belgium, northeastern France and of southwestern France. How has the location of France helped France to be a wonderful nation?

Twelve. Why did the boys bring so very many silk aprons, silk handkerchiefs, silk patterns and other articles of silk manufacture from France? Study of silk industry as learned by some of the soldiers who visited Lyons and St. Etienne.

Thirteen. What were some of the copies of masterpieces brought by Americans? Show pictures. What have the French contributed to art?

1. Love and appreciation of art. Love for the beautiful. Cultivation of art instinct in children. Educating talented children at expense of government
2. Pictures of Corot, Bonheur, Millet, Le Brun
3. Study of artists, important pictures shown and told about to class. Feature stories written from Room Two *Monitor*, about certain pictures
4. Game. Who can find the most pictures by French artists in the Woodland Building?
5. Tribute paid to Miss Buchanan for valuable collection of pictures. Letters written to her
6. Louvre. Gems of Louvre

7. Visit, after study, to city art gallery

Fourteen. Why were many of the convalescent soldiers sent to Southern France? Climatic conditions in southern France. Climatic conditions in southern France as compared with northern France. Where were some of the convalescent camps?

What soldiers from the United States found a similar climate in northern France to that which they were accustomed to in the United States? What conditions did they find?

Fifteen. Why have the Germans looked longingly at the French territory along the Belgium border? What trouble has already been caused by this situation? History of the acquisition of Alsace and Lorraine. What did the intelligent soldiers expect to find when they found coal deposits? Is this true in France?

Sixteen. What was being done in the square beds into which the flats off the coast of Brittany have been divided? Study of oyster industry.

Seventeen. In visiting with the "poilou," at what occupation did they find most of them had been engaged? What do they raise on their farms? (wheat, flax, sugar beets, etc.) What did the "doughboys" think of the French farming methods? Pictures of old implements, also of modern tractors and implements used in reconstruction

Eighteen. From what place does some of the best china in the world come? Why? Study of manufacturing of china in Limoges. What material is required for the manufacturing of china? Do we have such material in Kansas City? Why?

Nineteen. Where in France did the boys find the opportunity for mountain climbing. Study of the Alpine district, Mt. Blanc. What did they see the people doing there? Show pictures.

Twenty. One soldier went the length and breadth of France by boat. How did he do it? Study of rivers and canals used in transporting food and ammunition. What is the "missing link" in France?

Twenty-One. What newspaper did the boys enjoy most while with the A. E. F? Two pages of *Woodland Monitor* devoted to feature stories. Some of the stories are feature stories written about French peasant life—stories taken from French artists' pictures. All write stories—the best in penmanship and theme written in paper. Copies of *The Stars and Stripes* brought and read.

Twenty-Two. What were some of the French words used by soldiers at reunion? *Bon jour, Vive La France, pardon', parle vous, Bon ami, merci, madame, monsieur, mademoiselle, s'il vous plait, adieu.*

Twenty-Three. Why did so very many soldiers return to America in such splendid physical condition? Study of foods, exercise, diet, etc.

Twenty-Four. How to entertain soldiers after they have had a good time visiting about France? Sketches: Jeanne d'Arc, Jean Val Jean, The Diamond Necklace, songs.

The problems are made out by the teacher, some suggested by children. Some are worked out by the whole group, some by individuals, and some by small groups. Some are worked out before the reunion, others prepared to give the day of the reunion. Friday, two weeks from the day the project began, is selected for the day of the reunion. All work is directed toward that aim. Much drill is found necessary for the success of the "Reunion."

1. Sentence forms. Use of complete sentences, subject, predicate, number, etc. Drill on verbs
2. Elimination of "baby blunders"
3. Use of adjectives in describing things seen in France
4. Because of use of such sentences as, "He fought noble," it was found necessary to learn use of adverbs. Study from language books
5. Attempt to enlarge vocabulary. Use in conversation of "isolated," etc.
6. Drill in spelling
7. Drill in penmanship, to be able to write letters and articles for school paper
8. Songs. La Marseillaise, Star Spangled Banner, America, learned by all; Somewhere in France, Joan of Arc, by groups. Groups selected

to prepare and give sketches from Jeanne d'Arc, Jean Val Jean, and The Diamond Necklace. Jeanne d'Arc is read in class and characters impersonated, tried out and selected. The other two are prepared at home by groups and the best scenes selected for "Reunion"

The Reunion

Room is decorated with red, white, and blue. Stars and Stripes with Tricolor displayed. Posters, cartoons, and border depicting French scenes are placed around room.

1. Soldiers (Room Two—47 strong) gather, greeting each other with French words. Scout suits and Red Cross aprons worn by many children

2. Soldiers tell in what division they were, where they landed, and show in what drives they saw action

3. "America" sung and Flag salute given

4. One group tells of all the soldiers from the French republic that they saw. They tell of the use of camels. They show on block outline map the routes used in coming to France

5. Soldiers who visited Paris show pictures and describe beauties of Paris

6. One "poilu" tells of his government—President, premier, and cabinet. His sister tells of the present conditions in her country

7. A group of Red Cross Hut workers tell of rural France. Information from Dorothy Canfield Fisher's, "Home Fires in France." A nurse recently returned shows pictures and tells of the battle fields as they are today. A tourist who visited France before the war describes the beauties of France before the war. She shows pictures, taken from *National Geographic Magazine*

8. Souvenirs are exhibited on large table. They tell what they are, where they were found, and experiences with French country people. They describe implements used for farming. Also show pictures of tractors being used there now

9. A group show the silk "souvenirs de France" and tell of the silk industry in France as they saw it

10. Greatest pictures of French artists are shown

11. Boys tell of experiences and what they learned of oyster industry in Brittany

12. Dramatizations given

13. Paper read

14. "La Marseillaise" played on Victrola and then sung by children

15. Original dramatizations given, telling of things seen in France

16. Four boys tell of a motor trip thru France

17. Some girls show perfume and soap which they brought back and they tell how it is made

18. A Frenchman explains why in his country they drink so much wine

19. Songs by groups. "Somewhere in France is a Lily," "Joan of Arc," "Long, Long Trail," "Star Spangled Banner"

GEOGRAPHY IN THE SCHOOLS OF ENGLAND AND WALES

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The position which geography occupies at the present time in the British scheme of national education is of great interest not only to the teacher of geography but to the educationist in general. In the first place, there has been in recent years a complete change both in the content of and in the approach to the subject.

Our parents and grandparents stocked their memory with the isolated facts of cape and bay, ocean and port, or spent their time studying physical geography, physiography as now it would be called. A new conception was given when men like the late Professor Herbertson, Sir Halford Mackinder, Dr. Fleure and others showed not only how to make the subject educational in the best sense of the term, but also how to enable students to understand and appreciate both national and international problems which directly or indirectly arise from the interaction of man and his environment. Thus is it possible to give our pupils a really intelligent interest in the world of today. This great inspiration, the influence of which is only now being felt, lies at the base of the modern teaching of geography in British schools.

MODERN GEOGRAPHY

Unfortunately the term "geography" with its old association remains to define the new ideas. Much effort is required and much lost in endeavoring to strip the term of its old garments and clothe it anew. The study of geography in our schools a few decades ago was uninteresting and soul killing, related as it was to the accumulation of dry-as-dust facts and divorced from all consideration of human activity and experience. Today the geographer seeks to find cause and

to show effect. Flamborough Head is no longer one of a long list of capes; it is the end of one of the chalk ribs of England carrying on its "head" a lighthouse in place of the former "flame" or beacon to warn the sailor of the dangers to navigation. It is a coastal feature with a structural relation to the build of England, a danger and a landmark to the seaman of the North Sea. Often the existence of these widely divergent connotations—the old and the new interpretation of geography—is the cause of much difficulty in obtaining proper recognition of the subject in our schools. If history reviews the activities of men from the past to the present, geography establishes its relationship with history as the study of mankind today. This it does, not only by reviewing the several activities of different peoples, but by following up the establishment of their interdependence, their need for mutual aid in a world slowly realizing that it is one great human unit wherein are the workshops and playgrounds of all peoples. Above all geography gives outlook whereby the opportunities of the present based on the development of the past may be to some extent consciously moulded to yield a future of great ideals finding some relation in a world of facts.

The New Teaching

The permeation of such a conception into our school teaching has necessarily been slow and difficult. It takes time for the inspiration of great minds to reach and to influence others. British people are essentially conservative and more than one decade is required for teachers to break away from tradition and prejudice. Thru this stage geography is now passing but it gathers impetus with time. The growing interest in the subject may be gauged by the phenomenal growth of the Geographical Association[1] and the circulation of its organ the *Geographical Teacher*. A recent article by Sir John Scott Keltie in *The Geographical Review* shows the headway made by the subject in the Universities. These two factors—inspiration and academic training—will ensure ultimate success to the work now being done.

Geography in Primary Schools

In the primary or elementary schools geography has no struggle for inclusion in the curriculum. It is compulsory in all primary schools

[1] The Geographical Association was founded by a group of public schoolmasters in England in 1892 and subsequently organized by Professor Herbertson to encourage the better teaching of geography. It has now grown to a membership of over 4,000 spread thru all English using lands. Its Hon. Secretary is Prof. H. J. Fleure and its offices are at 1 Marine Terrace, Aberystwyth, Wales.

receiving grants from the Board of Education and approximately one hour per week is given to the subject. Still, the position is far from satisfactory. In some measure this is due to conditions common to all subjects, overcrowded classes, inadequate equipment and the inability of a teacher responsible for all subjects of the curriculum to specialize even to a slight degree in one. In London and a few other large towns it is now becoming the rule to have a specialist in each of the principal subjects for the upper standards but in the great majority of primary schools this is not possible. A teacher in the primary schools depends very largely upon the academic work and educational training done in college. The ordinary course of study outlined by the Board of Education for teachers in training for work in elementary schools demands a knowledge of the general principles of geography with a somewhat detailed study of the British Isles. For those who so desire, an advanced course of study may be taken on some special region as Europe or the Monsoon Lands. Were geography compulsory in the Training Colleges and taught in all cases by experienced persons, all would be well in the primary schools. Unfortunately the subject is optional, which means that even those who take it do not always get the best tuition, while others pass to the schools not only without the inspiration but without even the elements of knowledge of the new geography. Then, too, there are thousands of teachers whose college days go back further than they care to contemplate and whose acquaintance with the "new" geography must necessarily be slight.

It is remarkable, therefore, that with such disadvantages, progress of a real character has been made in the primary schools. Even if the inner meaning of human geography is not fully appreciated, there is an increasing knowledge of what is meant by regional geography. Many educational authorities are not only drawing up suggestions for the teaching of geography under the advice of those qualified to speak on the subject, but they are granting facilities to teachers to attend lecture courses and summer schools in order to get into touch with the new ideas. The best hope lies in the general desire of the teachers of the primary schools to become acquainted with modern geographical teaching and the endeavor of the Geographical Association by the *Geographical Teacher* and thru its branches to foster and develop the new movement.

GEOGRAPHY IN SECONDARY SCHOOLS

It is premature to discuss what will be the position of geography in the new Day Continuation Schools. These are not yet in general

operation but it is probable that with the short time allowance and the new type of student a combination of geographical and historical studies will give the widest scope, create the greatest interest and yield the best results in outlook and citizenship.

The position of geography in the secondary schools presents the problem in its most critical form. If our survey be limited for the moment to the ordinary municipal or county high school, then the work is in a greater or less degree influenced on the one hand by the position of the subject in the universities whence is drawn the supply of teachers, and on the other hand to some extent by the position in the elementary schools whence are drawn the majority of the scholars. In addition there are controls and regulations within the schools themselves, based on past experience and tradition which in a measure act contrary to a new subject striving for its proper place in the curriculum. Normally, the work in the elementary school consists, as far as teachers have the ability to carry out the work, firstly of the study of the home region expanding into that of the British Isles, utilizing these for an acquaintance with maps of all types; secondly a study of the world, principally of the influence of environment both on simple human societies and on more advanced peoples, the basis of study being the major natural regions. Such a scheme naturally leads to the work in the secondary school which usually makes provision for a descriptive account of the British Isles or of the major natural regions (or of both) followed by a study of the continents arranged and graduated to lead from the more simple climatic regions with their human control the more complex regions often of great industry where human activity is at a maximum.

School-Leaving Examination

A secondary school course extends over four or five years, at the termination of which an external examination—the School-Leaving Examination, (age sixteen)—is given by an examining body recognized by the Board of Education. This examination determines in the first place whether geography will be taken in the middle and senior forms of secondary schools, and in the second place, if taken, the type of work done. For the purposes of qualifying for a certificate[2] a pupil

[2] In England there are two principal school examinations. One at approximately the age of sixteen is a "senior" or school leaving examination when the majority of secondary pupils leave. The certificate obtained at this examination exempts a candidate from "matriculation"—the first examination for a university degree—if in the school examination he has reached a certain standard of proficiency in the subjects required from the

is examined in subject groups. These are:—

I. English group; usually English language and literature, history and religious knowledge
II. Language group; ancient and modern languages
III. Science group; mathematics and the sciences
IV. General subjects group; drawing, music, hygiene, laundry, etc.

In the Oxford Senior Local, the Oxford and Cambridge Joint Board, the London General School, and Bristol Senior Examinations geography is placed in Group I. Durham places it in Group III. In the Northern Universities Joint Board, the Central Welsh Board, and the Cambridge Senior Local examinations it is placed in Groups I and III under identically the same syllabus. This is obviously the position for a subject of the character of geography and possibly other examining bodies will follow the lead of Cambridge and the Northern Universities Joint Board. To obtain the certificate the general rule is that a pupil must pass in at least five subjects (London—six) of which one must be taken from each of Groups I, II, and III. It is obvious, therefore, that schools have offered those subjects in which it has been most convenient to obtain qualified teachers. In spite, however, of this tremendous difficulty it is interesting to note the following statistics for the School-Leaving Examination during 1920.

Examining body	Number examined	Number taking geography	Number passed in geography
University of Bristol	391	237	169
University of Cambridge Local Examinations Syndicate	9549	7142	4216
Central Welsh Board	2829	2380	1218
University of Durham		not published	
University of London	5296	3760	1822*
Northern Universities Joint Matriculation Board	6039	5145	2649*
University of Oxford Local Examinations	7904	6615	2914*
Oxford and Cambridge Schools Examination Board	3642	862	392*

*Reached "credit" standard, the number "passed" not given.

"matriculation" examination. Where pupils remain at the secondary school for a post-matriculation or advanced course extending over two years, there is a second or higher school examination. It is possible that this examination will be generally accepted for the "intermediate" examination for a degree on the same conditions that the first examination exempts from matriculation. It is on this second examination that the national scholarships to the universities are awarded—hence the importance of "Advanced Courses" in the English scheme of education, and the tragedy of geography in being omitted from them.

These examinations have also operated adversely in another direction, tho this must be attributed largely to the inability of the teacher. The common practice has been for examiners to set two papers, or two sections to a paper, one of which was styled "physical geography," the other set essentially on a specified region, or rather continent, as Africa, Asia, etc. The result has been firstly, physical geography has been divorced from regional and human geography and given undue emphasis, secondly some continent has received attention out of all proportion to its importance and altogether regardless of its world setting. It is indicative of the change towards the subject taking place both within and without the school that Cambridge has not only placed geography in Groups I and III, but has done away with physical geography as a separate paper and has formulated a syllabus which requires a sound study of world geography, carefully and thoroly taught with correct emphasis on regions of special importance. This applies also to some of the other examining bodies and it is only fair to say that whatever the school examination, a good teacher could frame a four-year course which would give a sound training in geography and allow a pupil to take the examination "in his stride."

Advanced Courses

In consequence of the radical change in the attitude of the universities towards the subject, a steady stream of trained geographers—specialists in their own work—is passing into the schools. In probably forty per cent of the schools geography is now well taught and in all it is rapidly improving. Unfortunately a new difficulty has arisen which threatens to check the progress of the last few years unless it is speedily removed. During the last few years the Board of Education has followed the very laudable policy of extending secondary school education to the age of eighteen or nineteen and thereby making the course of study from the secondary school to the university continuous. The "Advanced Courses" as the post-matriculation work is called, are based on past experience and show little acquaintance with recent changes. Thus the main subjects of study in any such course must be selected from one or other of the following groups:

A. Science and Mathematics
B. Classics, viz., the civilization of the ancient world as embodied in the languages, literature and history of Greece and Rome
C. Modern Studies, viz., the languages, literature and history of the countries of Western Europe in modern and medieval times.

The immediate effect of these regulations has been to throw geography back to a position from which it had slowly dragged itself by sheer

merit. The strange interpretation which the Board gives to "Modern Studies" (*viz.*, "*the advanced study of modern foreign Western European language and literature with the relevant history, together with the history of England and Greater Britain. It must also include either the study of a second modern foreign language or work of good scope and standard in English Language and Literature*"), excludes geography as a principal subject from each of the groups. Among British geographers the position taken up is that geography is a pivotal or liaison subject holding strong connections and affinities with the study of natural sciences on the one hand and with humanistic studies on the other. There can be no question that geography should be a possible principal subject in the Modern Studies Group, and it would seem obvious that from a human and educational point of view a training in science and mathematics would be all the better if a subject which, grasping with one hand the physical basis of the world, points with the other to the effect on and the utility to mankind. Also among the teachers of the classics there are many whose opinion should carry weight, who think that geography should find a principal place in their group of subjects. The official pronouncement on the Advanced Courses and the progress which geography has made in certain universities have led to some strange incongruities in the examinations and therefore in the work of these post-matriculation classes. Those schools which take the Higher School examination given by Durham, Oxford and Cambridge Schools Examination Board, and Oxford can only take the subject as a subsidiary. Those taking the London and the Cambridge Higher examination may only take geography as a subsidiary subject, but they may offer "physical geography and geology" as a principal subject within the science group. This however, is of little value to geography. Schools taking the higher examinations conducted by the Northern Universities Joint Board, the Central Welsh Board or Bristol may offer geography as a principal subject within either the Modern Studies group or the Natural Sciences. The latter is undoubtedly the correct position and it cannot be but that ere long this strange anomaly will be removed.

THE BOARD OF EDUCATION AND GEOGRAPHY

The Board states that it does not wish to prejudice the position of the subject and indeed there have been a number of Summer Schools of Geography arranged for those engaged in the teaching of the subject. What has happened in practice, however, is that schools desirous of having an "Advanced Course" and whose examinations

are conducted by the universities offering no examination in the subject, have "orientated" the teaching of the school to the new requirements and the highest salaries and most important positions naturally go to those teachers responsible for the subjects of the Advanced Course. It is very significant that schools once doing excellent work have, in some instances with official approval and advice, dropped the subject in the Middle School with the inevitable result for the geography teacher's position and emoluments. The following statistics on the Higher School Examinations for 1920 are instructive:—

Examining body	Number examined	Number taking Geog. as princ. sub.	Number taking Geog. as subsidiary
University of Bristol	Not given	None	None
University of Cambridge Local Examination Syndicate	Not given	No exam.	None
Central Welsh Board	540	52	No exam.
University of Durham		Not published	
University of London	142	No exam.	4
Northern Universities Joint Board	913	40	77
University of Oxford Local Examinations	170	No exam.	14
Oxford and Cambridge Schools Examination Board	1202	None	4

Perhaps this state of affairs is an unhappy phase of the transition period thru which geography is passing. Already the principle is conceded that the Board is "prepared to give sympathetic consideration to any well-considered proposal for an Advanced Course in which geography is a predominant subject." But at present such a course carries a considerably smaller grant and the sanction of the Board does not remove the difficulty of the Higher School examination. One such Course is in existence. The principal subjects are physics, history and geography. Here the underlying principle is that the post-matriculation course shall give the scientific training of physics, the humanistic study of history with geography as a liaison subject effecting that coördination and unity demanded of an advanced course. There is furthermore an experimental course under the Welsh Board at Ruabon School in which the correlation of other subjects with geography is emphasized.

There is, howeyer, a steadily increasing feeling thruout the country not only that the interpretation of "Modern Studies" should be so

widened as to permit the inclusion of geography, but that it should be possible to take three subjects not necessarily falling within any of the official groups but which are expressive of modern civilization, be it expressed in literature, history, economics, geography or scientific research.

The Public Schools

In the Public Schools with few exceptions geography is neglected except perhaps in the commercial or army classes. This is due to the relatively unimportant position which the subject occupies, or occupied till recently, in the older universities and the civil service examinations, which resulted in an absence of university scholarships in the subject on the one hand and the omission of the subject from one of the principal examinations on the other.

Geography and Citizenship

Taking a broad survey of the whole field of geography in schools, marked progress is seen, progress due, not to official sanction and benevolence, but to the enthusiasm of those who see in modern geography "that rightly and humanly studied, in conjunction with history, it forms the best introduction for the ordinary citizen to the study of the great international questions which in outline at least, every responsible member of a self-governing democracy controlling its own foreign policy ought to understand, and that it is peculiarly adapted to develop in the rising generation that spirit of international appreciation which alone can make the work and aims of the League of Nations a reality."

THE VALUE OF REGIONAL GEOGRAPHY

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About a century ago, Karl Ritter won the title "Father of Modern Geography" by his attack on the encyclopedic study of facts of geography. He urged that this meaningless, formal study of geography be replaced by a study of the influences of physical forces on life. This conception gave a new meaning, broader purpose and dignified the study of geography by recognizing the rational element as the one most important. The earth now came to be studied as the home of man. It was now essential to learn what facts were earth influenced and therefore significant. Henceforth geography could be taught so as to make pupils think. No subject lacking in situations demanding reason and imagination, can make a strong appeal to the human mind. The memory "crazy quilt" type of geography teaching is still common in our schools and accounts for the general dislike and lack of interest pupils manifest in the subject. It is not to be inferred that vital facts are to be neglected. They will be presented as explanatory of other facts and will be grouped naturally in support of broad generalizations. Even more facts than now taught can be retained if properly associated in an interesting way. We have followed a faulty psychology in drilling pupils on unrelated geographic material.

THE NATURAL GEOGRAPHIC UNIT

A geographic region is delimited by its somewhat similar conditions of temperature, rainfall, surface, minerals, soil, and such factors. Under such conditions definite forms of vegetation, animal life, density of population, occupations and modes of life prevail. Political geography tends to isolate facts from their causes; physical geography, properly humanized, tends to relate these bits of information. The natural geographic area is the logical unit of organization. Political areas may reflect but the fortunes of war or the skill of diplomats. Natural areas offer a basis for causal geography. A few large geographic regions will cover any continent and their treatment saves time and avoids mental confusion. Only recently we studied small political units noting separately facts of surface, climate, drainage, products, etc. Our late geography teaching emphasizes large geo-

graphic regions, physical, climatic, human and so on and shows the response of life and industry which the region brings about.

The teacher, who wishes to organize her work on the regional basis, must determine (1) what regions to present; (2) what method can be used to make it concrete and interesting and (3) how to submerge fact study in developing broad generalizations.

The region selected should show man's dependence on or response to nature. Definite life responses are associated with such natural geographic areas as the Barren Lands of Canada, the Great Plains, the Great Lakes Region and the South. South America presents some strong regions as the Amazon Basin, Argentine Plains and the Deserts of Peru and Chili. Africa offers such types as the Nile Valley, the Sahara, the Soudan Grass Lands, the Congo Jungles and the South African Deserts and Plateaus. In all such regions, interesting human adjustments are in evidence.

Some industrial regions can be recognized but there is always a physical background for each great occupation. The manufacturing area of the United States is east of the Mississippi, north of the Ohio and includes New England, New York, Pennsylvania and New Jersey Most of the reasons for its location are natural resources of soil, coal, water power, iron ore, water transportation and forests. The human factor of immigration has also strongly favored this location. The South is dominantly agricultural as a result of long seasons, fertile soil and abundant rainfall.

It is more difficult to locate crop regions for we find that a crop is not always grown where physical conditions favor it. Such is the condition in California which is ideal for wheat but more profitable crops as fruit and alfalfa are grown instead. On the contrary, an industry may be important in a region somewhat unsuited to it as sheep ranching in Australia. Generally speaking, however, each cultivated crop as date, olive, sugar beet, celery, rice and others are grown where nature generously rewards man's efforts.

A region may often be best studied thru its typical city. Here the influence of environment is shown in the wealth, typical industries and rate of growth. The pupil should study the factors producing Chicago, New York, Pittsburgh and other large cities. It may be stated as a problem as; Which of the following cities will develop most rapidly: Seattle, Los Angeles or New Orleans?

METHOD OF PRESENTATION

The second problem of the teacher is, how shall the region be presented? Mainly from the child's instinctive interest in the life of the

people. The physical serves only as an essential background to be used when needed to explain human conditions. Many teachers present facts of surface, climate and drainage for their own sake. In the lower grades difficult earth relations cannot be understood but are implied as, "reindeer feed on moss where it is too cold for grass," or the "Eskimo eats the flesh of bear and seal as it is too cold to grow grain, fruits or vegetables." The child sees that the camel is suited to desert conditions and that dogs are adapted to the frozen north. Each region should form a picture in the child's imagination. To this end, maps, pictures, products and striking descriptions, should be freely used. An example of a physical area presented by the project method may be briefly shown.

Project. Why are the Great Plains from the 100th meridian to the base of the Rocky Mountains sparsely inhabited?

I. Problem. What is the history of this region?
   1. Explored by (a) Lewis and Clark, (b) Zebulon Pike
   2. Well described by Parkman in *The Oregon Trail*
   3. Give a description of the Indians, buffalo, pioneer life
   4. The failure of corn due to droughts, grasshoppers, hot winds

II. Problem. To study the physical features and natural resources to learn what occupations are possible
   1. Rainfall. Consult map. Explain. To what crops adapted?
   2. Is irrigation possible? Sugar beets. Alfalfa
   3. Region well suited to grazing. Nutritious buffalo grass
   4. Forest map. Is lumbering possible? Pioneer sod shanties
   5. Soil fertility shown by large crops in moist years
   6. Minerals. Use maps. Insufficient for large mining enterprises
   7. Is manufacturing possible? No raw material, coal or water power, no water transportation, distant markets and few laborers

III. Problem. To see if this semi-arid region can be made to support a dense population
   1. Science does not teach that rainfall can be increased by plowing land, planting trees, etc. What can be done?
   2. How much can be irrigated? See irrigation map. Discuss methods of irrigation. Describe the Arkansas, Platte and Missouri rivers
   3. Does the occupation of grazing call for many or few people?

4. New crops suitable to the region as Durum wheat. Kafir corn, Sudan grass, etc., have been introduced. Discuss effect
5. Is the region suitable to tree crops of any kind?

On the sand table make a ranch, alfalfa farm or sugar beet field. Study pictures, noting wind mills, corral, etc. Write simple stories of life in the region.

In conclusion, does regional geography assist in building up important generalizations? The experience of the past shows that unrelated bits of information taught as geography are of little value and are readily forgotten. Much of the time given to the subject has been wasted. Pupils have lacked interest and teachers enthusiasm. The fault has been a lack of organization. The remedy is regional geography taught thru problems and projects. The socialized recitation develops initiative, coöperative spirit and stimulates thought. The teacher must aid in finding geographic laws and making important summaries of worth while knowledge. The region must be studied causally and visualized accurately. The teacher must be a master of word picturing to aid the child's imagination. Pictures and maps should be freely used. The fundamental principles of man's dependence on nature and human interdependence in society must be clearly recognized.

PROJECT ON LUMBERING

Correlation Between English and Geography

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In our schools the correlation between English and every other subject is so close that every course furnishes opportunity for drill in English composition. As I hope to show thru this report, very excellent results may be enjoyed in a high school course in English by the use of a big topic from which all the assignments may be made, and around which much interesting information may profitably be gathered.

A freshman class in English composition gave to this geography teacher the opportunity to use the topic "Lumbering" as the basis of the study for the quarter. Any other vital topic would have served as well. The interest of the class, which showed itself in cheerfulness in meeting every assignment, and which resulted in a pleasant freedom

of expression in the class periods, made the writer feel that the experiment was amply justified by the results.

The ultimate aim of the course was to give practical drill in spoken and in written English. The plan was to begin with a study of lumbering in East Texas, spending considerable time in getting that situation clearly before the pupils, then letting the study expand naturally until it took them into a study of the other lumber regions of the United States, and left them with better English equipment and an enlarged interest in lumbering and the allied industries.

Excellent class books were built up by the pupils. These books contained the assignments with correct dates, the students' corrected themes, and the best of the information and pictures gathered by the pupils. The best theme in each assignment, and any other contributed material went into a class book, which remains with the school.

Lesson I

"The Tree" by Joyce Kilmer; a poem for discussion and memorization. Visualization, encouraged by discussion, resulted in memorization without mechanical effort. Incidentally, the pupils were drilled in punctuation, couplet form, meter, the writing of titles, etc. A framed picture of the General Sherman Tree, a good copy of Corot's The Dance of the Nymphs, and the lovely sight of a shapely tree seen thru the window helped the thought of the poet to communicate itself to the members of the class.

Lesson II

Oral composition: Famous Trees of History. The stories of the following trees were told:

"The Charter Oak"
"Penn's Treaty Oak"
"The Washington Elm"
"The San Jacinto Oak"
"The Evange'ine Oak"
"The General Sherman Tree"
"Birnam Wood" in Macbeth
"The Argonne Forest"
"The Olives of Gethsemane"

Lesson III

Bibliography on lumbering gathered. This lesson gave the students help in finding library references by the use of the card index, the *Reader's Guide*, and the encyclopedias. In addition to this practical help, this bibliography furnished the basis for later library references on the topic. Study of a vegetation map of the South opened the way for the study of East Texas lumbering.

Lesson IV

Letter writing. Addresses of East Texas lumber concerns were gathered, and letters written to the heads of these lumber concerns

asking for information and for advertising material. The generous responses to these requests gave first hand information that furnished material for later class discussions and reports.

LESSON V

Library report, Toothacher: "Commercial Raw Materials," Pines, pp. 30–34. Discussion and building of outline for theme. Hayne: "Aspects of the Pines." Beginning of topic, How Trees are Planted: The work of Mother Nature and man's work in planting trees.

LESSON VI

Theme on Pines. Booklet, "The Big Trees of California." "The Big Trees of Australia," *National Geographic Magazine* on "Lonely Australia."

LESSON VII

Reading report: Hubbard's, "A Message to Garcia." Reading from Price: "The Land We Live In." Lumbering methods in Germany. Comparison and contrast with East Texas methods.

LESSON VIII

Themes: Life in an East Texas Lumber Camp, and The Forests of the South. Having two competing camps in the class stimulated discussion and criticism.

LESSON IX

Poems to motivate the next assignment: "What Do We Plant When We Plant a Tree?" and "An Arbor Day Tree." Discussion: The five great forest regions of the United States. Reference: Allen, "Industrial Studies of the United States," and McMurry's, "Type Studies from United States Geography."

LESSON X

Oral report on the uses of wood, the lists made under the spur of competition. Spelling lesson from words in the lumberman's vocabulary, found in the Allen and McMurry readings. The words follow: tote-road, bunk, log road, slue, jam, key log, pulp mill, tramway, boom, circular saw, cross cut saw, rafts, flume, donkey engine.

LESSON XI

Discussion: How trees grow. Reference: Snyder "First Year Science." Geography lesson on lumbering centers found in books by Allen and by McMurry.

Lesson XII

Theme: In a National Forest. Reference: Price, "The Land We Live In." Discussion of technical terms found in Snyder. The terms follow: osmosis, protoplasm, capillarity, cambium layer, pith or medullary rays, monocotyledons, dicotyledons, grafting, budding, chlorophyll, stomata, calyx, corolla, anther, stamen, pistil, stigma, ovary, pollen, embryo, parasite, seed dispersal.

Lesson XIII

Discussion: Allied industries connected with lumbering. Oral report: My Favorite Spot near Home. Reading from, "As You Like It."

Lesson XIV

Theme: Allied Industries Connected with lumbering. Poems for appreciation: Björnson's "The Tree"; Lanier's "Sun-rise" and "The Ballad of Trees and The Master."

Lesson XV

Theme: The Changing Beauty of the Forest thru the Seasons. Discussion of Hardy's "The Woodlanders."

Lesson XVI

Oral report: The protection and care of trees. Davey tree surgery. Government conservation of our national forests. Conservation methods possible in East Texas.

Lessons XVII–XXXV

Lumberman's edition of a daily news paper. Reference: Miller's, "Practical English Composition, Book II." For this, paper was obtained from the printing office, and a special edition was printed by each pupil by hand. Considerable ingenuity was displayed by the pupils in the reworking of their material so as to use it in these papers, in making original cartoons, and in following up the suggestions of the course by bringing in new and interesting material. In addition to the material that the pupils were free to include, the following articles were required:

News Item from a Lumber Camp
Biographical Sketch of a Lumberman
Accident in a Lumber Camp
Conservation of the Lumber Resource
Funny Happening at a Lumber Mill
Review of a Book on Lumbering
Interview with a Lumberman
Editorial, subject selected
Advertisements

List of Technical Readings

1. Toothacher: Commercial Raw Materials
2. Van Hise: Forests and Forestry
3. Allen: Industrial Studies of the United States
4. Chamberlain: How We Are Sheltered
5. McMurry: Type Studies from United States Geography
6. Conservative Lumbering at Sewanee, Tenn.
7. Price: The Land We Live In
8. Brunchen: North American Forests and Forestry
9. Snyder: First Year Science
10. Blaich: Three Industrial Nations
11. Brigham: Commercial Geography
12. Smith: Commerce and Industry
13. Chamberlain: North America
14. Carpenter: How the World Is Housed

INTRODUCTORY GEOGRAPHY FOR COLLEGES

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A brief survey of the catalogs of the colleges giving courses in introductory geography will show many opinions as to the character of the subject matter of such a course. So much of geography is by definition a border line subject and the field is so broad that it is no wonder that a course should reflect the special training of the instructor and take on color from his predilections. But whatever may be the tenor of the course all instructors will admit that an analysis of the elements of environment should be the basis of study. The diversity of methods lies then in the extent to which the details and technicalities of physical environment, as in physiography, meteorology, climatology, and oceanography, may be taught appropriately to college students in the departments of geography.

There are apparently two schools of method in teaching this course. They are represented by the college which lays great emphasis on the morphology of land forms and the college which sees little importance in the physiographic knowledge and launches more or less directly into anthropogeography or economic geography. The first is characteristically American and has been developed by those who have come to geography with considerable training in geology. The emphasis which they lay upon the technicalities, apparently, is not so much from a conviction that it is important in environmental studies to know that to double the velocity of a stream is to increase its transporting force to the sixth power, as it is from a love and familiarity with the subject matter of physiography. One of our best known textbooks in beginning geography for colleges asks the student to learn what are the factors of glacial motion, how streams pick up material, and certain facts of thermometry. In an important geographic institute in this country the beginning course is the "Origin and History of Land Forms," followed directly, in the catalog at least, by the "Geography of North America." Another university is requiring a year course of five hours together with considerable laboratory work in physiography as an introduction to geography. This is a very general state of affairs.

There are, in contrast, the schools which lay great emphasis upon the economic or social side of geography. They tend to ignore the preparation in the physical phases or give it such scant attention as is shown in a recent textbook—in this case on social geography—where matters of physiography are relegated to mere paragraphs. For example, the types of mountains are explained in a few sentences and there is far too little material to give the student any definite conception of mountains or of the different types. The student approaches the succeeding material on the anthropogeography of mountains not trained, so

far as the course goes, to distinguish between such contrasted groups as the Pyrenees, the Catskills, and the Basin Ranges.

What is the function of a course in introductory geography in college? It is designed for underclassmen, of which there are two types: those going on in geography, and those who are taking but one or two courses in this department in order to satisfy certain personal or academic requirements. For the first type the course in physiography in all its details would be an appropriate introduction. But it would not be complete with merely treating the morphology of land forms, but should go on to matters of climate. I put a knowledge of climate with physiography of the land, in importance in preliminary training. For the second type of student—the student who is taking but one or two courses in geography—physical geography alone, physiography of the land, social or economic geography do not appear adequate.

The course must fulfill the following requirements: It must give the essentials of physical geography sufficiently well to permit the student to take up studies in regional, economic or historical geography as given for undergraduates. By essentials is meant those facts which aid him in pursuing elementary geographic studies or appreciating the geographic phases of courses in other departments. It would in no way displace the advanced courses in physiography or climatology which should be given to all graduate students. Secondly, such a course should be broad enough to include the application of these elements of environment, namely, the fundamentals of anthropogeography and economic geography. The course should be rounded out so as to accomplish something of itself and not merely a preparation, a sharpening of tools. Thus it would be of value for the student taking but this single course in the department. Perhaps this student wishes to take a course on North America or any of the continents. Such a course could be taken with some advantage without any previous training in geography and yet how much more profit to the student if he understands such matters as inversions of temperature, movements of underground waters, and the effect of glaciers in over-steepening alpine valleys. There is still another requirement, and a most important one. This is the matter of place geography. Thruout introductory course there should run a series of exercises in place geography so that in later courses in geography or other subjects the names of Eastern Galicia, the Karakoram Alps, and the Island of Ascension will stand for actual places, and not merely strange names.

It is easy to quote examples of facts in physical geography which stand one in good stead in later courses. A course in the "Geography of the United States" would bring us, for example, to the matter of crops, and in turn to the matter of soils. Properly prepared one should know something of rocks, how the rocks weather to soils, what kinds of soils are derived from the different rocks and what are the ground water conditions beneath the surface. Or again, one cannot appreciate the economy of the Alps, their dairying industry, the forests and the water power, the alpine villages versus the valley towns, or the corridor valleys without knowing something of the action of glaciers. Nor is one able to picture the Landes of France without knowing something of how piedmont and deltoid deposits may be raised above the level of the sea and modified by waves, winds and currents until they are covered with lagoons and migrating lines of dunes parallel to the shore. An appreciation of the contrasts between a Rocky Mountain "park" and a playa of the Basin Ranges demands training. One does not need training to learn that twenty inches of rainfall is the general—very general—limit of normal agriculture. But to understand all the factors of seasonal distribution of rainfall, rainfall types, evaporation and ground water conditions which go to make the above statement less general and more valuable requires something of a knowledge of the genesis of these conditions of rainfall, evaporation, and ground water.

But on the other hand, I am not sure that a student need know anything of planetessimals and I am certain that he need know nothing of geysers. Weather forecasting should have no place in such a course. Nor would lunar halos, sun dogs, terrestrial magnetism or tidal strains be pertinent. In short, physical geography in its entirety does not meet the

requirements. On the other hand, human geography, interesting as it is, does not give sufficient explanation of the causes of conditions and pays too much attention to the effect. This is not fundamental enough. What is needed in the colleges today is a renovating of the present course. All irrelevant material which does not build up one's experience in a direct manner so as to aid in appreciating the factor of environment in later geographic courses or in courses in other departments should be eliminated. To accomplish this, all the former conceptions of the subject matter of the course should be revaluated from this new point of view. To this should be added enough of the generalities of human and economic geography to show constantly the application of the elements of environment. In short there is a definite amount of training essential to get the most out of later geographic work and this should not be crowded out of the curriculum by the introduction of great masses of material which do not directly apply to the matter in hand. Then in the various colleges, there will be adopted, possibly, some standard for introductory courses. This accomplished, there may be an interchange of ideas between the instructors of the several colleges which will be mutually helpful, and we may feel, at such a time, that a step forward has been made in the teaching of geography.

GEOGRAPHICAL PUBLICATIONS

E. Ehrlich Smith. **Teaching Geography by Problems.** 306 pp., 2 photos. Doubleday, Page & Co., Garden City, N. Y., 1921. $1.50.

The author has endeavored to place in the hands of teachers a book that will be of practical assistance in teaching geography by the problem method. In this respect the book should be welcomed. Its use should do much to vitalize the subject and to aid the teacher who is endeavoring to teach by this method. Part I discusses the view point of modern geography, the present practice, and the various methods of teaching. Part II presents many illustrative problems quite fully worked out and discussed.

Gertrude L. Elles. **The Study of Geological Maps.** 74 pp., 65 maps and diagrams. The Macmillan Co., N. Y., 1921.

The book is intended as a text for use in teaching the geological map and its interpretation. Each important phase of the work is illustrated by diagrams and sketch maps. The following chapter titles indicate the scope of the volume: Use of Topographical Maps in Geology; Relation of Topography to Outcrop; Problems Connected with Dip (Thickness, Depth); Folds and Slides and Their Effect upon the Outcrop of Beds; Faults and Their Effect upon the Outcrop of Beds; Igneous Rocks, Metamorphic Rocks and Mineral Lodes; Interpretation of Geological Maps.

Edith A. How. **People of Other Lands.** 92 pp., 5 colored illustrations. MacMillan Co., N. Y. 1921. 40 cents.

This is an interesting little text provided by the Universities' Mission for use in Central Africa.

Albert P. Brigham and Charles T. McFarlane. **Essentials of Geography. A Manual for Teachers.** 198 pp., 2 ills. Am. Bk. Co., N. Y. 1921.

Wallace W. Atwood and Helen G. Thomas. **Teaching the New Geography. A Manual for Use with the Frye-Atwood Geographical Series.** 202 pp. Ginn & Co., N. Y., 1921.